

ROPE-HAULED SYSTEMS FOR MATERIAL TRANSPORTATION



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 **agudio**
Flying over obstacles, since 1861

AGUDIO

TRANSPORT BY ROPE SINCE 1861

INNOVATION. TALENT. RELIABILITY. VALUES OF A PROFOUNDLY ITALIAN STORY.

A story that starts in the same city and in the same year witnessing the transformation of Italy into a nation.

It is in Turin that engineer Tommaso Agudio, giving form and substance to his pioneering spirit, his visionary talent and his unique expertise in the mechanical field, founded Agudio in 1861.

A brand that still nowadays, as part of a multinational group operating in different sectors, not only maintains its vocation to design and manufacturing of special lifting systems for material transportation, but also the spirit of its founding father and the continuous longing for innovation, research and development, pillars that have allowed a typically Italian business to become an important international benchmark in the technology of rope-hauled transport systems.

1863
Dusino funicular – Italy



1915
Elevator for cars – Italy



1948
Rosone ropeway – Italy



1970
Tachien dam cable crane – Taiwan



1985
La Muela dam cable crane – Spain



2002
Maen hydroelectric power plant inclined plane – Italy



2011
Pouzols Flyingbelt – France



1884
Superga funicular – Italy



1928
Garigliano cable crane – Italy



1960
Verzasca dam cable crane – Switzerland



1978
Rio Branco ropeway – Brazil



1997
Karun III dam cable crane – Iran



2013
Apiai ropeway – Brazil



2016
Barroso Flyingbelt – Brazil

1861 – UP TO NOW: A CONSTANTLY EVOLVING SUCCESS.

Ropeways, Flyingbelts, cable cranes, cableways, funicular railways and special systems.

In the world of rope-hauled transport systems, few projects can be replicated because different material and working conditions require customized design and construction solutions, aiming at minimizing the environmental impact and improving the cost-effectiveness of operation and maintenance. These principles have always been Agudio's prerequisites from the very beginning, applying patents and inventions to realize new tailor-made installations and revamp existing systems.

DESIGN AND BUILD WHILE SETTING NEW STANDARDS



The passion and professional skills of our personnel are the fundamental values we want to share with our partners, to transform over 150 years of experience and know-how into a unique and trustworthy service in each design phase: from the feasibility study to engineering, from implementation to operation and maintenance.

ENGINEERING SERVICES:

- Feasibility studies with CAPEX and OPEX estimation
- Basic and detail engineering
- Production and purchase
- Construction and commissioning
- Project Management

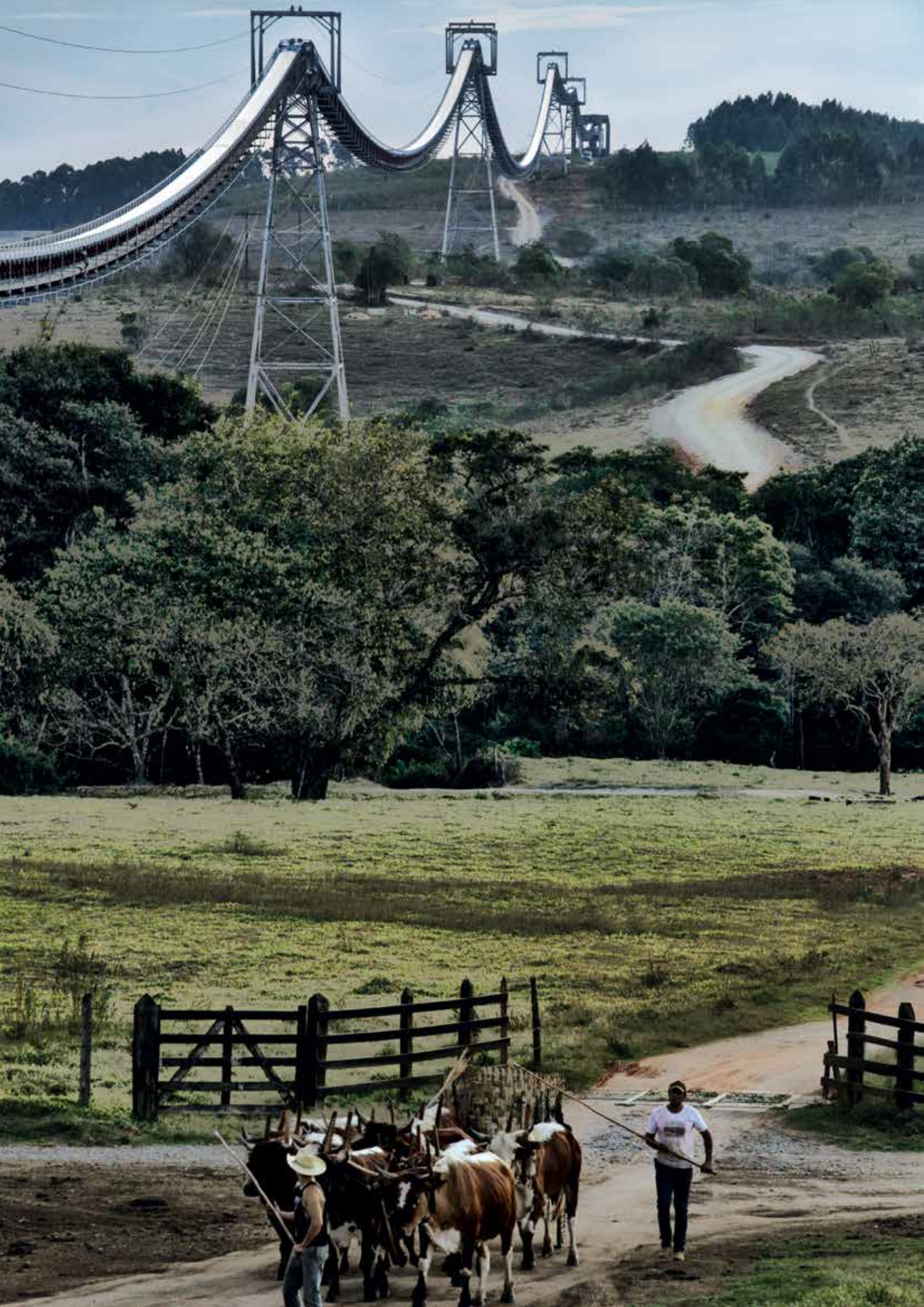
ROPE SPECIFIC SERVICES:

- Rope laying and tensioning
- Integrity check and maintenance
- Rope sliding

AFTER-SALES SERVICES:

- Strengthening and revamping of existing systems
- Maintenance and periodical overhauls
- Technical inspections
- Supply of spare parts





Agudio material transport systems are the most cutting-edge, effective and sustainable solution available on the market. The customization offered by rope-hauled systems is unique in the world, so as to overcome any environmental, operating and logistic obstacles, while ensuring at the same time top-quality performance.

Nowadays, Agudio's last generation Flyingbelts, cable cranes and ropeways have become a benchmark for customers more and more aware of the importance of eco-efficiency values, with particular focus on reliability, cost-effectiveness and sustainability.

INNOVATION AND SUSTAINABILITY AT THE HIGHEST LEVELS

Choosing an Agudio transport system means benefiting from a wide range of advantages, both in the short and long term:

A higher level of innovation
As a result of the specific experience in the sector and the constant investments in R&D.

A strong reduction in energy consumption
Typical of rope-hauled systems, with the possibility of further generating energy for transport downhill.

A very high level of automation
Capable of ensuring maximum reliability, best performance and the highest safety levels.

A high system availability
Thanks to specific software of static and dynamic analysis of the installations and the components quality.

A sharp cut in running costs
Due to a lower energy consumption, combined to a high system reliability and availability.

A higher system working life
Thanks to a well-established technology that can guarantee, through suitable maintenance plans, over 40 working years.

A considerable drop in CO₂ emissions
As a result of the replacement of transport systems based on fossil fuel consumption with completely electric-powered transport systems.

Low environmental impact
Both in terms of noise emissions and visual impact over the surrounding environment.

A great system stability
Capable of working also in adverse weather conditions, such as low temperatures and strong wind.

Optimization of maintenance costs
As a result of the combined use of top-quality components and detailed planned maintenance plans.

The Flyingbelt is a patented system combining the advantages of conveyor belts and rope-hauled systems into a unique product for its efficiency and reliability, ideal for the mining, extraction and cement fields, as well as big construction sites.

As it is not affected by the soil morphological conditions, the Flyingbelt can be used in any contexts, with a considerable reduction in the costs resulting from civil works, excavations and supporting structures usually required by conventional transport systems.

The adoption of standard components used also for traditional conveyor belts enables the Flyingbelt to be a highly innovative system but, at the same time, ordinary for its operating and maintenance methods and costs. Moreover, the Flyingbelt can be used for hybrid systems, where the same belt can run both hanging on ropes and on traditional supports laying on the ground.



LOADING POINT
The design of the material loading point can be limited just to the loading chute or extended to a real loading station on more levels.



UNLOADING POINT
It can range from "heap discharge" to unloading inside a station fitted with storage and material handling equipment.



INSPECTION AND MAINTENANCE
The Flyingbelt is equipped with a special vehicle designed specifically for inspection and maintenance operations.



AGUDIO FLYINGBELT TECHNOLOGY WITH NO BARRIERS

Capacity up to 10.000 ton/h	Speed up to 7 m/s	Spans over 1.000 m	Belt width up to 1.800 mm	Incline up to 25 deg
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LOADING SYSTEM

The loading system can be of rotating type (positioned in the middle of the station) or fixed type (positioned on the station perimeter).



UNLOADING SYSTEM

The material unloading can be carried out both by opening the bucket bottom or by rotating the bucket itself.

FIND OUT MORE



SYNCHRONIZING

The variation in the system capacity is easily achieved by adjusting the haul rope speed through the automatic synchronizing of all the operations in the stations.

Ropeways have always been the most cost-effective, rational and environmentally friendly solution to transport materials over long distances, steep slopes or poorly accessible areas.

Nowadays, Agudio ropeways represent the highest expression of this sector technology, with completely automated systems, which do not need personnel for material loading and unloading operations and guarantee high-level performances.

AGUDIO ROPEWAYS THE EVOLUTION OF SPECIES

Capacity
up to

800
ton/h

Bucket volume
up to

2
m³

Speed
up to

6
m/s

Incline
over

100
%

Working life
over

40
years





Hook lowering
until

400
m

Payload
up to

50
ton

Translation
up to

8
m/s

Lifting
up to

4
m/s

Span
up to

2.000
m

TRACK ROPES

Track ropes anchored on a fixed point or on a mobile carriage running on rails to cover circle or rectangular working areas.



TYPES

Radial, parallel or swinging cable cranes, according to "tailor-made" solutions designed for each specific need.



ENERGY SAVING

Power generating systems capable of producing over 1 MW when running downhill.



AGUDIO CABLECRANES PERFORMANCE AND INNOVATION

FIND OUT MORE



Dams, quarries, viaducts.

It is where the other means of transport cannot reach that Agudio technology shows its superiority. The use of a double track rope, the high loading capacity and working speed are the distinguishing elements of Agudio cable cranes. They reflect the state of the art in this technological sector and make it possible to manage complex sites in a simple and advanced manner, with considerable advantages in terms of implementation costs and timing.



TRANSPORT BY RAIL
Inclined planes are mainly used for the transport on rail of people and heavy loads on steep slopes.



AERIAL TRANSPORT
Rope-hauled installations are often the best solution to transport big equipment inside complex construction sites.

Agudio's activity is not limited to rope-hauled systems for material transportation, but it includes also hybrid installations for the transport of materials and people, ideal solutions to facilitate the access of personnel and equipment to sites difficult to reach by road, such as hydroelectric power plants.






AGUDIO SPECIAL INSTALLATIONS NO LIMITS TO CREATIVITY








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Flyingbelt - Barroso, Brazil		
	Length in m	7200
	Vertical rise in m	50
	Number of towers	18
	Capacity ton/h	1500
	Speed in m/s	4








Cable crane - Yusufeli, Turkey		
	Capacity ton	3x28
	Span in m	560
	Translation speed in m/s	6
	Lifting speed in m/s	3
	Hook vertical descent in m	300








Cable crane - Cerro del Aguila, Peru		
	Capacity ton	28
	Span in m	415
	Translation speed in m/s	6
	Lifting speed in m/s	2,5
	Hook vertical descent in m	220








Ropeway - Apiai, Brazil		
	Length in m	9500
	Vertical rise in m	480
	Capacity ton/h	450
	Speed in m/s	4,5
	Number of buckets	275








Ropeway - Boteni, Romania		
	Length in m	650
	Vertical rise in m	80
	Capacity ton/h	120
	Speed in m/s	2,5
	Number of buckets	31








Cable crane - Foz Tua, Portugal		
	Capacity ton	2x28
	Span in m	440
	Translation speed in m/s	7
	Lifting speed in m/s	2,5
	Hook vertical descent in m	220








AGUDIO INNOVATION
BORN IN ITALY,
EXPORTED ALL OVER THE WORLD

	Length in m	18000
	Vertical rise in m	450
	Capacity ton/h	2x215
	Speed in m/s	3,5
	Number of buckets	1300








	Length in m	215
	Vertical rise in m	5
	Number of towers	1
	Capacity ton/h	150
	Speed in m/s	1,5








	Capacity ton	25
	Span in m	735
	Translation speed in m/s	3,5
	Lifting speed in m/s	2
	Hook vertical descent in m	270



	Capacity ton	2x28
	Span in m	610
	Translation speed in m/s	7
	Lifting speed in m/s	2,5
	Hook vertical descent in m	140



	Capacity ton	2x45
	Span in m	760
	Translation speed in m/s	1
	Lifting speed in m/s	0,5
	Hook vertical descent in m	200



	Length in m	13700
	Vertical rise in m	400
	Capacity ton/h	600
	Speed in m/s	5
	Number of buckets	475





High Technology Industries

LEITNER
ropeways

Rope-hauled passenger transportation systems in the mountains and urban areas.



POMA

Rope-hauled passenger transportation systems in the mountains and urban areas.



agudio

Rope-hauled systems for material transportation.



MiniMetro

Rope-hauled systems for local public transport.



Prinoth

Snow groomers and tracked utility vehicles for all types of slopes and terrains.



DEMACLENKO

Lances, fan guns and complete snowmaking solutions.



LEITWIND

Megawatt class wind turbines.



The strength of a company consists in anticipating times, in predicting the market evolution before and better than the others, in taking care of one's customers when addressing more and more complex and global challenges with confidence.

Exactly for these reasons, AGUDIO is now part of the High Technology Industries Group (HTI) together with companies and brands such as LEITNER ropeways, POMA, PRINOTH, LEITWIND, DEMACLENKO and MINIMETRO, a reality with over 60 branches all over the world, more than 3.000 employees and an annual turnover amounting to over 700 million euros. A Group based on solid values, such as technology, reliability and sustainability.

In this context, AGUDIO preserves its own specific and distinctive identity linked with material transport systems, thus contributing with its team and expertise to enhance the Group's leadership. Project by project.